



**General Certificate of Education
June 2010**

**Design and Technology: 1540
Food Technology**

FOOD1

Final

Mark Scheme

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Section A

Answer all questions

- 1) Name two sources of low biological value protein (LBV).
- Peas
Beans
Nuts
Gelatine
Lentils
Cereals (2 marks)
- 2) Name two water soluble vitamins.
- Vitamin B
Vitamin C (2 marks)
- 3) Explain two functions of protein in the diet.
- Growth
Repair
Energy (2 marks)
- 4) What are the effects of vitamin C deficiency?
- Bleeding gums
Wounds heal slowly
Scurvy
Dry Skin (2 marks)
- 5) Explain the difference between micro and macro deficiency.
- Macro nutrients required in large amounts, Micro in smaller amounts. (2 marks)
- 6) Define the following Body Mass Index and Basal Metabolic Rate.
- Body Mass Index- figure to assess whether a person is underweight, overweight or obese
Basal Metabolic Rate- rate at which the body uses energy when the body is at complete rest (2 marks)

- 7) Explain two factors affecting the energy requirements of different groups of people.

Metabolism
Body size
Age
Activity
Pregnancy
Gender
Climate

2 marks for a fully explained example (2 x 2 marks)
1 mark for just providing an example, or for an example with an incorrect / unclear example

- 8) Describe, with an example for each, two functions of food additives.

Colours
Preservatives
Sweeteners
Emulsifying agents
Flavourings and flavour enhancers
Antioxidants
Fortification

2 marks for a fully explained example (2 x 2 marks)
1 mark for just providing an example, or for an example with an incorrect / unclear example

Section B

Answer ONE question from this section

- 9) a) Discuss the influence of cultural and social factors influence the development of food products.

Responses should include a discussion based upon specific examples of the influence of social and cultural factors affecting food product development.

- Family patterns
- Family life cycle
- Changes in family composition
- Different cultures
- Economics
- Work and non-work patterns
- Increased leisure time
- Travel abroad

Mark range 8-10: Responses will reflect a full discussion with at least 6 plus justified points raised

Mark Range 4-7: Responses will include a discussion of 4-5 justified points or 8 plus mentioned superficially.

Mark Range 1-3: Responses will be superficial with little/ no justified points raised

Mark Range 0: No points worthy of credit

(10 marks)

- 9) b) Describe how fruit and vegetables could be incorporated into a product range targeting toddlers and young children.

Responses will include well justified examples of how fruit and vegetables can be included in a product range targeted at children.

Mark range 8-10: Responses will reflect a full discussion with at least 5 plus justified points raised

Mark Range 4-7: Responses will include a discussion of 3-4 justified points or 8 plus mentioned superficially.

Mark Range 1-3: Responses will be superficial with little/ no justified points raised

Mark Range 0: No points worthy of credit

(10 marks)

10 a) Discuss how current issues affect food choice.

Responses should include a discussion based upon specific examples of current issues affecting food choice

- Grazing
- Dashboard Dining
- Trends in food consumption
- Snacking
- Travel and tourism
- Regional and international influences
- Pesticides
- Food miles / provenance
- Credit crunch
- Increased need for ready-prepared foods
- Lifestyles – single parents, family patterns
- Diet and health issues – 5 a day; reducing fat, sugar, salt, increasing fibre; heart disease, obesity, diabetes etc

Mark range 8-10: Responses will reflect a full discussion with at least 5 plus justified points raised

(10 marks)

Mark Range 4-7: Responses will include a discussion of 3-4 justified points or 8 plus mentioned superficially.

Mark Range 1-3: Responses will be superficial with little/ no justified points raised

Mark Range 0: No points worthy of credit

10 b) Describe the stage of food product development.

Responses should include a description based upon specific stages of food product development, in the correct order / sequence.

- Background research
- Market research
- Design Specification
- Generation of ideas
- Concept screening
- Development and Product Formation
- Testing and Modelling
- Final Product Development
- Evaluation

Mark range 8-10: Responses will reflect a full discussion with at least 5 plus justified points raised

Mark Range 4-7: Responses will include a discussion of 3-4 justified points or 8 plus mentioned superficially.

Mark Range 1-3: Responses will be superficial with little/ no justified points raised

Mark Range 0: No points worthy of credit

(10 marks)

Section C

Answer the question in this section.

- 11 a) Describe how a range of food products based on pasta can be developed. You may use annotated sketches to illustrate your answer.

In your answer make to reference to:

- Nutritional Value (8 marks)
- Flavour (4 marks)
- Texture (4 marks)
- Colour (4 marks)

Responses will make reference to different types of pasta products

- Reference: thiamine, NSP, Carbohydrates, protein, low fat, increase fibre eg wholegrain pasta
- Additional of protein foods eg chicken, prawns, ham, pulses
- Increase water soluble and fat soluble vitamins with fresh vegetables eg grated carrot
- Use of herbs and spices, garlic
- Use of raw fresh vegetables to add texture colour
- Addition of sources

Any well justified response will be credited

- 11 b)** Discuss the importance of the information included on food labels.

Responses will make reference to the importance of the information included on food labels

- Name of product
- Special claim
- Average quantity
- Weight
- Manufacturer's name and address
- Description (if needed) / photograph
- Price
- Nutritional value
- Guarantee
- Best before date
- List of ingredients (descending order by weight)
- Cooking instructions
- Storage instructions

(10 marks)

Mark range 8-10: Responses will reflect a full discussion with at least 5 plus justified points raised

Mark Range 4-7: Responses will include a discussion of 3-4 justified points or 8 plus mentioned superficially.

Mark Range 1-3: Responses will be superficial with little/ no justified points raised

Mark Range 0: No points worthy of credit

11 c)(i) Name two different types of food poisoning bacteria

- Two different types of food poisoning bacteria will be named – e.g. bacillus cereus, campylobacter, listeria, escherichia coli, staphylococcus aureus, salmonella (2 marks)

11 (c) (ii) What are the factors required for the growth of bacteria?

described in full with reference to the factors required for their growth

- Time
- Moisture
- Food
- Temperature (4 marks)

11 (c) (iii) What are the sources and symptoms of food poisoning from the bacteria you named in part (c)(i)?

This will depend on the responses given above.

	Sources	Symptoms
e-coli	Raw meat	Vomiting, diarrhoea, fever, headache
Staphylococcus aureus	Nose, skin, cuts, sores, cooked meats, pies, custards, ice cream	Severe vomiting, diarrhoea, exhaustion
Salmonella	Sliced / cooked meat, pies, poultry, sausages, eggs, faeces, sewage	Headache, fever, vomiting, abdominal pain
Bacillus cereus	Faeces, cold mear, gravy, cream, sausages	Vomiting, diarrhoea, abdominal pain
Campylobacter	Poultry, raw meat, unpasteurised milk	Profuse diarrhoea (blood stained), abdominal pain, nausea, exhaustion
Listeria	Water, soil, manure, milk and its products, soft cheeses, pate, ready made salads, cook-chill products	Flu-like symptoms, miscarriage, blood poisoning, pneumonia, meningitis

2 marks for sources and 2 marks for symptoms
 1 mark for each for a limited or only partially correct answer. (4 marks)